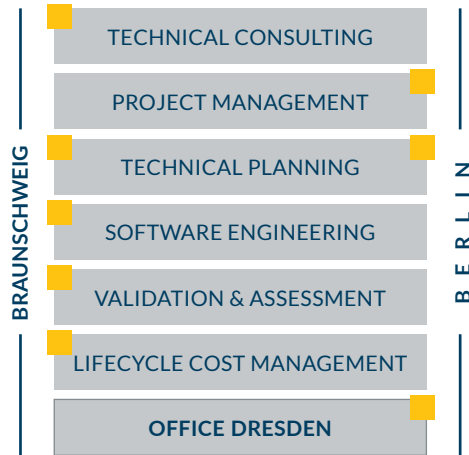




GRABAND

SICHER // UNTERWEGS



GRABAND is a nationwide leader in the field of railway engineering. We predominantly deal with planning and management, as well as with development, validation and assessment of projects concerning technical equipment in rail-bound local and long-distance traffic. We especially focus on implementing and assessing functional safety. Our software tool, Systecon's Opus Suite, offers support in decision-making in life-cycle management of systems. This advanced software is the first choice of hundreds of companies worldwide when it comes to analysis support of technically complex systems.

- 1986** Founded as an independent service company
- 1988** Acceptance as an inspection body by the BZA (now EBA (national safety authority))
- 1990** Opened subsidiary in Berlin
- 1994** Certification in accordance with ISO 9001
- 1995** Acceptance as an assessing organization through the EBA
- 2002** Opened subsidiary in Dresden
- 2012** Accreditation as an inspection body type A in accordance with DIN EN ISO/IEC 17020
- 2013** Moved to our head office in Braunschweig
- 2016** Freshly boosted appearance as the GRABAND trademark. German representation of the Systecon AB for Opus Suite
- 2020** Gerhard Schulze and Klaus-Dieter Sievers transfer their responsibility as managing directors to their colleagues Rolf Stadtlander and Michael Schönberger
- 2023** Appointment of Serhat Adak as managing director
- 2024** Rolf Stadtlander transfers his responsibility as managing director to his colleagues Michael Schönberger and Serhat Adak



About us

Flat hierarchies allocated in service areas - that is how GRABAND is structured. As an autonomous company in every respect, GRABAND is 100% independent of third parties. Our roots lie in railway engineering, and with the abilities and knowledge acquired in this field, we continuously conquer new areas of expertise.

At GRABAND, most of our team have been with us for many years. Some of them joined us directly after their apprenticeships or straight from university and many stay with us for their entire professional career.

It is crucial to us to combine the experience of senior staff with the high drive of younger employees in mixed teams. Here our team spirit is exceptionally strong and our teamwork is cordial, which is why our work atmosphere is regarded as extraordinary by external observers.

Serhat Adak and Michael Schönberger
Members of the Management

Successful together

A TEAM WITH CLEAR PRINCIPLES //

Independence

Complete independence combined with our highly qualified services form the basis of a sustainable and trusting cooperation with all of our clients and project partners.

Innovation

As a constantly growing company, we are driven by long-term success and significant participation in innovative change, and we work to shape what this means.

Sustainability

For us, it is self-evident to be conscious of our social and environmental responsibility, and to conduct our business accordingly.

Trust

Trust is the basis for all internal and external business relationships with our employees, customers, suppliers and other partners.

Human resources development

We focus on systematic, demand- and future-oriented personnel development in order to meet future requirements.

**You wish to set the course and pick up speed?
Welcome to Team GRABAND!**





With our expertise gained over more than 25 years of planning experience, we offer customised solutions for the realization of your very own objectives in rail infrastructure projects.

The more trades involved,
the more thrilling it becomes

PLANNING WITH GRABAND: YOUR SUCCESS //

A self-reliant GRABAND team is ready to support you in your technical planning of rail facilities at our headquarters as well as at our subsidiary in Berlin. GRABAND takes care of your desired planning tasks of your new development, modernization and dismantling projects for complex facilities in the rail sector.

A special focus thereby is on the planning of technical equipment from command control and signaling through to electric, railway traction power and telecommuni-

cation systems up to level crossings technology. This accounts for facilities of Deutsche Bahn AG, its subsidiaries, private railway companies as well as for projects of local public railway transport.

GRABAND also supports you in carrying out the call for tenders and awarding process. We prepare your construction measure from the call for tenders over tender evaluation, bidder negotiation up to the awarding proposal.

Count on our word and judgement

TECHNICAL CONSULTING AT GRABAND //

Apart from customer support in project planning, GRABAND pays special attention to correct implementation of required specifications when designing new systems.

At the same time, GRABAND can comprehensively be integrated in individual project teams of industrial partners, and is therefore able to meet demands of covering production peaks at any time. This especially accounts for assuring functional safety in the fields from interlockings over (rail) vehicles and up to robotics.

GRABAND offers competent and economic solutions as well as customized hardware made for your special requirements – we serve you in both: using new technology as well as modernizing existing systems.



// Complex projects require swift and extensive systemic analyses. Our team independently creates solutions to technical and holistic questions.



We improve the safety of your product

FUNCTIONAL SAFETY AT GRABAND //

Our technical consulting experts have been competent and reliable partners in implementing functional safety practices for decades. Functional safety checks should already identify all product operation risks during the development process. With the assistance of methods and processes, we discover all risks of a system through intensive analysis of functions. We focus on the risks occurring through operation of a product which could potentially cause damage to humans or the environment.

The process of functional safety offers you the chance to recognize these risks at an early stage, and to deal with them cost-effectively. Functional safety offers solutions to keep the risks manageable or avoid them altogether. Our aim is to produce a product that meets the highest possible safety standards at the lowest possible expense. To achieve this goal, the technical consulting department of GRABAND is your best choice.

// Are you aware of all the risks connected to your products? Can you prove that every step has been taken to ensure safe operation? We take care of that.

Your success is our understanding of programming

SOFTWARE ENGINEERING AT GRABAND //

Programming is a vast field. It is easy to let a program grow code line by code line. However, when you expect software to create reliable results because the safety of a train and its passengers depends on these, then you need more than a simple knowledge of programming language.

GRABAND has decades of experience in processes which enables maximum requirements of a software. From design through to implementation and testing up to the verification and validation, all process steps

have to be taken care of to ensure systematically built, error-free software. GRABAND takes care of them.

GRABAND leads you through the whole development process of your software solutions, from the first idea through to the finished product. GRABAND does not implement prefabricated solutions, but supports the development in your organization with the know-how of the whole company, dependent on where you need us - including the verification of single subsystems up to validating a feasible overall system.

// In existing rail software infrastructures, very different systems may interfere with each other. Changing a component always demands reviewing the whole system.





Mobility: Safe for all – today and tomorrow

ASSESSMENTS AND EXPERT OPINIONS BY GRABAND //

Functional safety has become essential in our high tech world.

At GRABAND, an independent inspection body type A is accredited in accordance with DIN EN ISO/IEC 17020:2012 both for railbound traffic and in the areas of automation technology and automotive. Thus GRABAND is also available as an independent service provider for third-party tasks.

In the field of command control and signaling technology, GRABAND carries out assessments / validations and

draws up expert opinions in the environment of EBO, CENELEC and EN 61508.

Design reviews of interlocking systems occur for widespread technologies, such as SIMIS-C, SIMIS-D, SICAS, ZSB 2000 and B950.

GRABAND undertakes assessments on the basis of ISO 26262 in the automotive sector. Validations of development processes take place, for instance, for high-voltage storage media and electronic steering systems. In addition, we carry out equivalent confirmation reviews.

The commissioning of complex projects is not a one-man show

PROJECT MANAGMENT AT GRABAND //

Why do you need GRABAND? Because you work for years towards the milestone called „commissioning“. Because your adherence to schedules and the many correct decisions taken thus far can quickly be forgotten if the commissioning does not take place as previously planned.

You have already done a series of commissioning. Were you satisfied with the overarching communication and documentation? Did you have adequate capacities to prepare the commissioning along with your daily operations? Were you able to bring all project participants in and satisfy them?

If you responded to one of these questions with “no”, then our experience, our ability to see the proverbial big picture, and not least our ability to stay calm when your project gets stuck, speaks for you solving your problems with GRABAND.



Complex systems require more than a good feeling

THEY ASK FOR GRABAND //

Railways create a variety of complex, recurring challenges dependent on resource requirements and life-cycle costs. When the complexity of a system increases, making the strategically correct move also becomes more difficult.

How many trains have to be acquired to cover the required operation? How should the maintenance structures be dimensioned for the next years? Which measures to increase reliability are most effective?

GRABAND has specialized in finding answers to these questions. We will help you develop a well-founded solution concept, based on your factual business operation and information from your system. We can explain how your trains, depots, workshops and spare parts interact and which impact reliability and maintenance improvements have on costs and your operating performance ability.

Curious now? Then read on and learn more about what we have to offer and of course about how we can help you.



Opus Suite allows you to evaluate performance and costs – e.g. of your traffic system – from a new point of view during an entire life cycle. Opus Suite consists of three different software tools which can be used either separately or combined. They stand for optimization, simulations and cost analysis.

OPUS10 is a world-leading software program for cost optimization of spare parts stocking and logistic support organization of complex technical systems. With OPUS10's decision support you can boost the availability of your vehicles and substantially reduce costs for spare parts.

SIMLOX enables you to simulate performance values of technical systems over various periods of time. Here various maintenance and operating conditions can be

compared, and the system capacity of your transportation system can be analysed. Through using SIMLOX, you will get to know the limits of your system better and can estimate future system behaviour more concretely.

CATLOC is a powerful software for Life Cycle Cost (LCC) analysis and other types of cost analysis and budget estimates. CATLOC helps you to take control of the costs for development, acquisition, operation and maintenance during your system's life cycle.



Which spare parts should be stocked? Do I have enough vehicles to meet my timetable? Are the current depot capacities sufficient? And what are our largest cost drivers?



Dr. Graband & Partner GmbH

Efeuweg 9 · 38104 Braunschweig · Germany
Budapester Straße 41 · 10787 Berlin · Germany
info@graband.de · www.graband.de